

January 21, 2016

Tom Moe
USS Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: Project: NPDES Line 3
Pace Project No.: 1259717

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on January 13, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Heather R Zika
heather.zika@pacelabs.com
Project Manager

Enclosures

cc: Terri Sabetti, NTS



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NPDES Line 3

Pace Project No.: 1259717

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

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SAMPLE SUMMARY

Project: NPDES Line 3

Pace Project No.: 1259717

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1259717001	WS-002 Scrubber Make-Up	Water	01/13/16 08:50	01/13/16 15:20
1259717002	WS-003 Thickener Overflow	Water	01/13/16 08:50	01/13/16 15:20

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SAMPLE ANALYTE COUNT

Project: NPDES Line 3

Pace Project No.: 1259717

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1259717001	WS-002 Scrubber Make-Up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1259717002	WS-003 Thickener Overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V

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ANALYTICAL RESULTS

Project: NPDES Line 3

Pace Project No.: 1259717

Sample: WS-002 Scrubber Make-Up Lab ID: 1259717001 Collected: 01/13/16 08:50 Received: 01/13/16 15:20 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	93.6	mg/L	5.0	0.29	10	01/14/16 15:58	01/15/16 13:07	7440-70-2	
Magnesium, Dissolved	210	mg/L	5.0	0.67	10	01/14/16 15:58	01/15/16 13:07	7439-95-4	
Total Hardness, Dissolved	1100	mg/L	100	50.0	10	01/14/16 15:58	01/15/16 13:07		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	831	mg/L	20.0	0.89	10		01/15/16 21:56	14808-79-8	

Sample: WS-003 Thickener Overflow Lab ID: 1259717002 Collected: 01/13/16 08:50 Received: 01/13/16 15:20 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	682	mg/L	5.0	0.29	10	01/14/16 15:58	01/15/16 13:11	7440-70-2	
Magnesium, Dissolved	49.8	mg/L	5.0	0.67	10	01/14/16 15:58	01/15/16 13:11	7439-95-4	
Total Hardness, Dissolved	1910	mg/L	100	50.0	10	01/14/16 15:58	01/15/16 13:11		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	1750	mg/L	40.0	1.8	20		01/15/16 23:02	14808-79-8	

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QUALITY CONTROL DATA

Project: NPDES Line 3

Pace Project No.: 1259717

QC Batch: MPRP/6380

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1259717001, 1259717002

METHOD BLANK: 281470

Matrix: Water

Associated Lab Samples: 1259717001, 1259717002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.029	01/15/16 12:12	
Magnesium, Dissolved	mg/L	ND	0.50	0.067	01/15/16 12:12	

LABORATORY CONTROL SAMPLE: 281471

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	49.5	99	85-115	
Magnesium, Dissolved	mg/L	50	49.2	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 281472

281473

Parameter	Units	1259385001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	29.1	50	50	79.1	80.0	100	102	70-130	1	20	
Magnesium, Dissolved	mg/L	71.9	50	50	122	123	99	101	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 281474

281475

Parameter	Units	1259528003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	25.0	50	50	77.0	77.0	104	104	70-130	0	20	
Magnesium, Dissolved	mg/L	11.9	50	50	63.1	63.8	102	104	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: NPDES Line 3

Pace Project No.: 1259717

QC Batch: WETA/15403

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1259717001, 1259717002

METHOD BLANK: 281901

Matrix: Water

Associated Lab Samples: 1259717001, 1259717002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	0.089	01/15/16 13:53	

LABORATORY CONTROL SAMPLE: 281902

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	49.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 281903 281904

Parameter	Units	1259752001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	28.8	50	50	81.1	81.0	105	104	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 281905 281906

Parameter	Units	1259764001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	ND	50	50	51.2	51.2	101	101	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: NPDES Line 3

Pace Project No.: 1259717

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

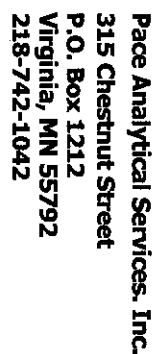
Project: NPDES Line 3

Pace Project No.: 1259717

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1259717001	WS-002 Scrubber Make-Up	EPA 200.7	MPRP/6380	EPA 200.7	ICP/4876
1259717002	WS-003 Thickener Overflow	EPA 200.7	MPRP/6380	EPA 200.7	ICP/4876
1259717001	WS-002 Scrubber Make-Up	EPA 300.0	WETA/15403		
1259717002	WS-003 Thickener Overflow	EPA 300.0	WETA/15403		

REPORT OF LABORATORY ANALYSIS


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MO#: 1259717

Due Date: 01/27/16
PM: HRZ
CLIENT: USS CORP

CLIENT NAME, ADDRESS, PHONE# :						INVOICE TO:		REPORT TO:								SPECIAL INSTRUCTIONS:												
USS																MINTAC LAB												
PROJECT: NPDES-LINE 3			SAMPLER: <i>Pan mott-16</i>			PERMIT REQ.: MN0057207																						
PROFILE NO: 146			BO# 140			SAMPLE COLLECTION DATE			SAMPLE COLLECTION TIME			SAMPLE TYPE		MATRIX		filter												
LOG-IN NO:			DESCRIPTION:			START DATE:		END DATE:		START TIME:		END TIME:		COMP		GRAB		LIQ.		SOL.		CONTAINERS		ANALYSIS:				
			WS-002 Scrubber Make-up			1-13-16		1-13-16		08:50		08:50										2		LAB FILTER: SO ₄ , Ca, Mg, Hard. Calc.				
			WS-003 Thickener Overflow			1-13-16		1-13-16		08:50		08:50										2		LAB FILTER: SO ₄ , Ca, Mg, Hard. Calc.				
RELINQUISHED BY:			DATE: 1-13-16			RECEIVED BY:			DATE: _____			TIME: _____			RELINQUISHED TO PACE SAMPLE LOOK-UP:			DATE: _____			TIME: _____							
RECEIVED BY:			DATE: 1-13-16			RELINQUISHED BY:			DATE: _____			TIME: _____			RECEIVED FROM PACE SAMPLE LOOK-UP:			DATE: _____			TIME: _____							
RELINQUISHED BY:			DATE: _____			RECEIVED BY:			DATE: _____			TIME: _____			RECEIVED FOR LAB BY:			DATE: 1-13-16			TIME: 15:20							
CUSTODY SEALS INTACT: YES _____ NO <u>1</u>			N/A _____			SAMPLES RECEIVED ON ICE: YES <u>1</u> NO _____			SAMPLE TEMPERATURE: <u>24</u> °C																			

	Document Name:	Document Revised: 23Feb2015
	Sample Condition Upon Receipt Form	Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt	Client Name: <u>USS</u>	Project #: WO# : 1259717
	Courier: <input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input checked="" type="checkbox"/> Client <input type="checkbox"/> Commercial <input type="checkbox"/> Pace <input type="checkbox"/> Other:	
Tracking Number: _____		
Custody Seal on Cooler/Box Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Seals Intact? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Optional: Proj. Due Date: _____ Proj. Name: _____		
Packing Material: <input type="checkbox"/> Bubble Wrap <input type="checkbox"/> Bubble Bags <input checked="" type="checkbox"/> None <input type="checkbox"/> Other: _____ Temp Blank? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Thermometer Used: <input checked="" type="checkbox"/> 140792808 Type of Ice: <input checked="" type="checkbox"/> Wet <input type="checkbox"/> Blue <input type="checkbox"/> None <input checked="" type="checkbox"/> Samples on ice, cooling process has begun		
Cooler Temp Read °C: <u>2.1</u> Cooler Temp Corrected °C: <u>2.4</u> Biological Tissue Frozen? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA		
Temp should be above freezing to 6°C Correction Factor: <u>0.3</u> Date and Initials of Person Examining Contents: <u>1-13-16 CL</u>		

			Comments:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>			
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.	
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____

Field Data Required? ☐ Yes ☐ No

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: [Signature] Date: 1/14/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)